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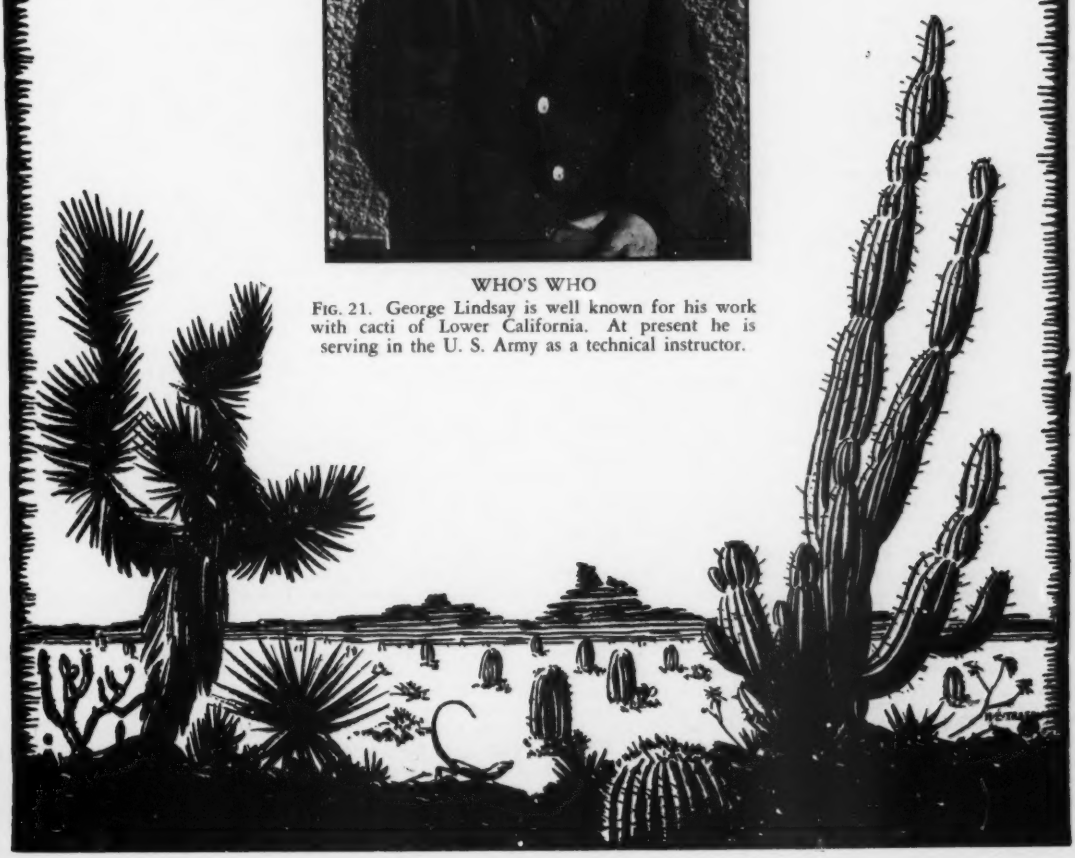
CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

Vol. XV APRIL, 1943 No. 4

WHO'S WHO

FIG. 21. George Lindsay is well known for his work with cacti of Lower California. At present he is serving in the U. S. Army as a technical instructor.



CACTUS AND SUCCULENT JOURNAL

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FROM A NATIVE CALIFORNIAN

I am getting acquainted with snow—it is often sifting down as we come out of school for our 2:30 A. M. breakfast. It seems often to come down very fine, like mica Christmas snow. The halo around lights seen through a snowstorm—the crunch of hard, dry, cold snow as we march to school in formation—all is new.

This Army life is interesting here in Colorado. The war still seems fairly far away from us—also, the type of fellow in our division is there because of particular interests, aptitudes and abilities. Thus the comradship is good—one makes friends rapidly, but they are soon shifted and lost-track-of. We do have discipline, but at school it is not that of the training camp. We have a good time.

School goes on twenty-four hours a day, seven days a week. I happen to have been placed in the graveyard shift, so go to school at ten-thirty P. M. to emerge at seven the next morning. So you see we haven't much time to think of cacti. However, I am looking forward to the time when I can complete my observations in Lower California and publish a book on the subject. How does that appeal to you, Scott?

One hope paramount in the soldier's heart is that he may be home soon when all the world is at peace once more.

GEORGE LINDSAY.

FROM BERKELEY, CALIFORNIA

EDITOR'S NOTE: The following was intercepted from one of Jack Whitehead's letters. When we informed the writer that we planned to publish it in the JOURNAL he remarked, "It's *your* reputation at stake but it's the first time a letter was ever published before the writer was dead." Jan., 1943.

This is a dead time of the year at the Garden. In the cactus and succulent garden I always let my plants pretty well dry up from the middle of November to the beginning of February. In this way they do not appear so very attractive while at rest. The dwarf Mesembryanthemums are in their glory dried up and flower quite well; there are quite a few nice things in flower now. Usually they flower in the summer but I feel that I am getting them to respond to treatment and that they will grow and flower with our seasons instead of South Africa's. Maybe I am wrong but another year will prove whether or not.

Echeveria is a very satisfactory genus in Crassulaceae for the amateur to grow. I have some fine looking plants in five and six inch pots, grown from cuttings, that are wonderfully attractive things. Unfortunately, the average visitor does not appreciate the great and lovely differences between the species and varieties and I overheard people say, "Oh, these are hens and chickens and we have lots of them in our garden." There is so much difference in plants raised from the same seed capsule. E. O. Orpet sent me two plants of *Echeveria carnicolor* some little time ago. They were raised from seed from the same parent plant. One of them is just another plant but—you should see the other one: a four inch pot crowded with several rosettes of nicely formed rosy bronze leaves that appear to be silky and half a dozen stalks of flowers that are bright scarlet. And all this at Christmas time. Something is wrong with the growers of Echeveria. Repeatedly I am told, and I often read, that several of the species will not form offsets. This is all rubbish as I have offsets on such so-reputed solitary rosetted forms as *E. peacockii* and *E. longissima*. The only reason I can advance for my getting offsets to form on these so difficult species is that I keep the old leaves pulled off the parent plant. Perhaps drying out the plants occasionally may help too in this production of offsets. What have you to offer here?

I am still playing around with the genus *Dudleya*. I find these are the most difficult of all Crassulaceae to grow successfully. For the first two years I had some fair luck and then last winter's rain and long continued dull, cloudy weather just about upset all my work. Plants died by the dozen. This is now the season when these plants, here in my collection, are awakening and they look more promising than ever before. They are succulents *par excellence* and withstand drought remarkably. Some plants have had no water at all for over a year and they are growing even better than those regularly watered once a week. I feel that I have generally been overwatering my plants.

Sedums I grow only for pretty plants; I am not at present interested in them botanically. My collection is pretty well filled with species that are known to cultivation and some that are merely "botanical." Last spring I planted out most of the species and they did remarkably well. This spring will see last year's propagation in the ground and only a few of the better ones will be grown along in pots. The greatest plant interest in the Bay Region appears to be mostly shown in the spring. Sedums are fine spring plants when grown in pots and I usually make some exhibitions to please the succulent fanciers. That they are pleased I know as most my exhibition plants return pretty well stripped of cuttings.

Xerophytic ferns are so little understood that I get a real kick from the publications of the "experts" who know how to grow them. I have a small, but representative collection that gives me much pleasure. Most of them I brought back from Arizona over a year ago. In spite of knowing their habitats in the desert I grow them without the slightest attention to the conditions of these habitats. Good rich, leaf-mouldy soil and plenty of water all the year around and these little creatures of the dry places flourish amazingly. I have long since come to the conclusion that the horticulturalists had better forget how their plants grow in the wilds and use a little common sense in giving them good treatment.

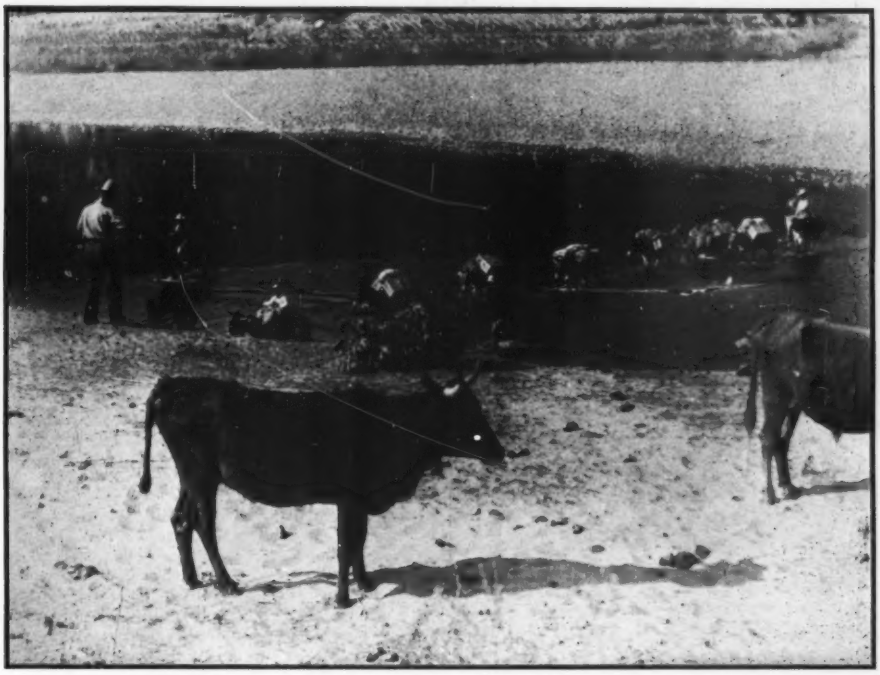

FIG. 22. Crossing the Rio Fuerte, Sinaloa. "Doc" takes a picture of the pack train as it fords the stream.

Plant Hunting in the Tarahumare Mountains of Chihuahua, Mexico

By GEORGE LINDSAY
Photos by Author

In a previous JOURNAL article entitled "Eight Days in Sonora"* I described a trip into a friend's ranch in Mexico. We were so limited for time that we were able to spend only a little over a day enjoying the hospitality of Guirocoba ranch, which was not enough! Thus, while on my way to Mazatlan the following October I stopped in at the ranch again.

Guirocoba is the jumping-off place for a vast, little known area in the mountains of southern Chihuahua. While there I heard stories of various parties who had outfitted at the ranch for extended pack trips into the land of the Tarahumare Indians, of visits to the Barranca de Cobre, (a gash rivalling our own Grand Canyon in grandure), of hunting trips, prospecting trips, and of an expedition of a group of ornithologists from the California Institute of Technology. It takes little such talk to get into ones blood, and as no cactus enthusiast had penetrated the region I decided to try; before I left the ranch I made arrangements for a trip the following March, one of the three months when it is practical to penetrate that region.

It is difficult to find a good companion for such a trip. Those who are interested in plants are often unable to spend time in field work, and it would be dangerous to take one not interested, for the delays caused by plant hunting would irk him. I was fortunate in having a friend, Dr. Robert Craig, who was interested in that country, specializing in the plants from that area, and who was willing to make arrangements for others to take care of his practice while he was away. Dr. Craig felt unable to be away over one month, and as the actual pack trip would take that long, we decided that I should go down before and get everything ready

*CACTUS AND SUCCULENT JOURNAL, March, 1939. (Vol. X, No. 9)

to avoid the delay such preparation always incurs, and that he would follow by train. This plan was followed and was satisfactory.

Thus I started out alone, my car loaded with pack boxes made up for our rather specialized equipment, concentrated foods, trade goods for the Indians, and all manner of other things. The trip down was uneventful, but as usual, interesting. The plants one encounters have already been described in the aforementioned article. Three days later I came bouncing over the little used road into Guirocoba.

The following days were busy ones. Our guides were hired, horses shod, pack outfits repaired and conditioned, a trip made into Alamos, the nearest town, where we bought staple foods for the guides and bolts of manta, a coarse unbleached muslin to trade with the Indians. A young beef was butchered and "jerked" to supply *carne seca* for the journey. I had a fascinating but busy time, as all was new and interesting experiences. The pile of equipment on the porch of the hacienda grew and grew until I wondered if our eight burros could carry it all! Finally all of the items on my lists were checked off and it was time to go to the railroad at Navajoa, Sonora, to meet "Doc."

The trip out to Navajoa was interesting, as I took a Mexican boy out with me to show him the comparative "civilization" of the city. He had never seen a train, of course, and I had the pleasure of watching his reaction to electric lights, a movie, eating with table silver in restaurants, and many other "firsts" for him. The beds in our hotel room were the first he had slept on—and though it doesn't seem possible, he tried to find a way to blow out the electric light when I unthinkingly told him to turn it out!

Finally all was ready. Our outfit was really quite impressive as we filed out of the ranch gate. Our head guide, Juan, was an alert Indian from the mountains who knew every trail, water hole, and ranchito in the whole country. Besides we had Chico, an old muleteer, and two boys, Champion and José, whose antics amused us throughout the trip.

The first day we rode through comparatively low country, the vegetation being thick and dense as is characteristic of the arid tropical zone. The streams were lined with fine bald cypress trees, *Taxodium mucronatum* Ten., while the hillsides were covered with huge kapoc trees, *Ceiba acuminata* (S. Wats.) Rose, which bore in their branches long Santa Claus beards of white kapoc where the pods had burst. Others were in flower, their five large petals each six inches long, nearly covered by a brush of silky white stamens! Other exotics were noticed as we rode along, among them a tree bearing pink tubular flowers in profusion, *Tabebuia palmeri* Rose. Large macaws and small parrots shrieked at us for disturbing their peace—parrots in the wild seem not to be happy unless screaming about something as if in a temper. The cacti seen on the first two days were the same as one would find about Guirocoba, namely, the two "pitahayas," *Lemaireocereus montanus* and *L. thurberi;* "cardon hecho," *Pachycereus pecten-aboriginum;* snaky *Rathbunia alamosensis;* "cardon barbon" or bearded cactus, *Cephalocereus leucocephalus;* fat *Ferocactus alamosanus* var. *platygonus;* naked *Echinocereus subinermis,* as well as *E. stoleniferus;* climbing *Pereskiopsis porteri,* and on one large rock we found clambering *Acanthocereus occidentals,* a visitor from the southern west coast of Mexico which we saw only at the one locality. Among the Mammillarias there was one, *M. sonorensis,* which at the time lacked even a name, but which has since been named with its several varieties by Dr. Craig.*

The first night we camped in an arroyo under a giant wild fig tree. Parrots were eating the fruit, knocking a great deal to the ground. The boys always scurried ahead to fill their pockets when they saw a fig tree along the trail.

The following day we continued through the "jungle," noticing from time to time crude arrastras where mules laboriously dragged rocks about in pits to grind gold bearing ore, and miners along streams patiently washing the gravel for placer gold, their total equipment consisting of a shovel and large wooden pan. Bright splashes of red were often supplied by the flowers of *Fouqueria macdougalei,* a relative of our own ocotillo. *Lemaireocereus montanus* was in full flower, the branches lined with white blossoms, indicating a good pitahaya season. Late in the afternoon we came unexpectedly onto a village of good sized adobe houses, in strong contrast to the Indian homes constructed of palm leaves which were commonly seen. A mile or so farther on we camped at another village, Baco Paco. The third day out we forded the Fuerte river, and knew that we had crossed over the north eastern corner of the state of Sinaloa and were now in Chihuahua. Near the junction of the rivers Fuerte and Chinapas we came across an interesting cabbage palm, *Sabal uresana* Trelease. The leaves of this palm are prized by the natives as material for weaving very fine "straw" hats, as well as baskets and mats. On our return our guides gathered a large supply of these leaves to take home. In the same region we noticed what appeared to be

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*CACTUS AND SUCCULENT JOURNAL XII, 10, pg. 155.

FIG. 23. "Doc" at siesta. An hour or so of rest was taken after lunch every day—a commendable custom is the Mexican siesta. Even hard rocks make comfortable pillows if one is tired. RIGHT: Packing eight burros twice a day was no small task.

a natural hybrid of *Lemaireocereus montanus* and *L. thurberi*. *L. thurberi* is characterized by a very short trunk, indeed the branches usually seem to arise from the ground itself, and by the presence of 12 to 17 ribs. *L. montanus* has a definite trunk, the first branch often being ten feet from the ground, and its branches have only eight prominent ribs. The hybrid seemed to be midway between the two, with ten or twelve ribs and branches from a medium trunk. We climbed most of the morning and by siesta time had reached a village called Molinos, where we decided to spend the rest of the afternoon collecting in the hills. Just before we got to Molinos we began to notice the first cactus new to us, a cespitose yellow spined Mammillaria. The plant liked rich leaf-mold soil, and was to be found growing in clumps out of fissures in shaded rocks. As I happened to be riding ahead and noticed the first one, Dr. Craig generously gave me credit for its discovery, naming the species *Mammillaria Lindsayi*.* Another plant which interested us was a Nopalea, which we at first though was a new varital form of *N. auberi*, and expected to name it variety *attenuata*. Further study, however, revealed that there is insufficient difference to support setting up a new variety, in spite of the fact that the Chihuahua type increases the range of *N. auberi* several hundred miles to the north of its known distribution in central and southern Mexico.

By noon of the following day we had reached a tiny village, Cerros Colorados, perched on a hillside. Cane was raised in a deep canyon nearby and manufactured at the village into crude brown sugar, or panocha, several types of which were produced. Some was pulled like taffy to make it soft, other was molded into the shapes of violins, hearts, etc. During the afternoon we climbed upwards into the first pines. The trail in places was dangerous and Juan wouldn't permit us to ride. We camped early that evening on the ruins of an old Indian building. The mountains were beautiful, being covered with pines, as well as oaks and other hardwoods, but still tropical enough to support such epiphytes as an occasional orchid or bromeliad. We were interested to find *Aloe vera*, an African plant, growing as an escape among the native agaves. As is the case in Lower California, the plant was probably brought by the first Jesuit fathers for its medicinal use in the early 1700's. *Aloe vera* is now used by our doctors in the treatment of X-ray burns! We left most of the columnar cacti at Cerro Colorado, but would find rather stunted ones in the bottoms of deep canyons.

Our days fell into the following routine. We arose at daybreak, the Mexicans kindled the fires and rounded up the stock. "Doc" and I took turns preparing our own breakfast, after which

*CACTUS AND SUCCULENT JOURNAL, XII No. 11., pg. 182.

our boy washed the dishes and packed the food. We usually started by seven-thirty or eight, which was prompt considering it meant saddling and packing twelve animals. After traveling until a little after noon we stopped for lunch and the necessary siesta, re-saddled about three and rode till we made camp at dusk. Thus we probably rode an average of a little over twenty miles a day. The evening meal was the heaviest, usually consisting of roasted "carne seca," or perhaps a chicken purchased from an Indian ranchero along the trail, canned vegetables, tortillas or pinole,* chocolate to drink and canned or dried fruit or chocolate bars. The vegetables sometimes were supplimented with a handful of pellets tasting like alfalfa but reputedly containing all of the elements found in fresh vegetables. Of course this routine was sometimes disrupted, as in the case when an old man came hobbling into camp one morning just as we were ready to start. He explained that he heard one of the "Americanos" was a doctor, and that he had suffered with a toothache for three months. The burros were packed, and "Doc's" first-aid and instrument case was of course on the bottom, but the old fellow was obviously suffering so much that we decided to unpack. After the instruments were boiled, "Doc" extracted six teeth! His novel dentist chair consisted of an upturned pack-box, and burros munched unconcernedly in his "office!" The patient was so overcome when the doctor refused any compensation that he sold us a dozen eggs at half price when we passed his ranch later in the day!

The mountains were rough, with complex drainage patterns, so that it was impossible to follow canyons or ridges. Thus we were always ascending or descending. Dropping into the Watchera river we followed it to the village of Metate. The canyon with its multicolor foliage was beautiful as we crossed and recrossed a stream bordered by large silvery sycamores, *Platanus racemosa* Nutt., and black walnuts, *Juglans regia.* On the cliffs over the stream we found an attractive little blue-green Sedum, tentatively identified as *Sedum alamosanum*

*A concentrated food used since the time of the conquistadores, consisting of ground parched corn and panocha. Very nourishing, concentrated, and palatable.

FIG. 24. This old boy was so happy to be rid of three months toothache he cut the price of a dozen eggs one-half! RIGHT: The old mission at Choro where the Tarahumares have congregated for ceremonies for 200 years although there is often no priest in attendance. The picture was taken from the porch of Don Jose Manciana's home, our host at Choro. The borro's ears are back showing resentment to two small boys' efforts in trying to push him into the picture.

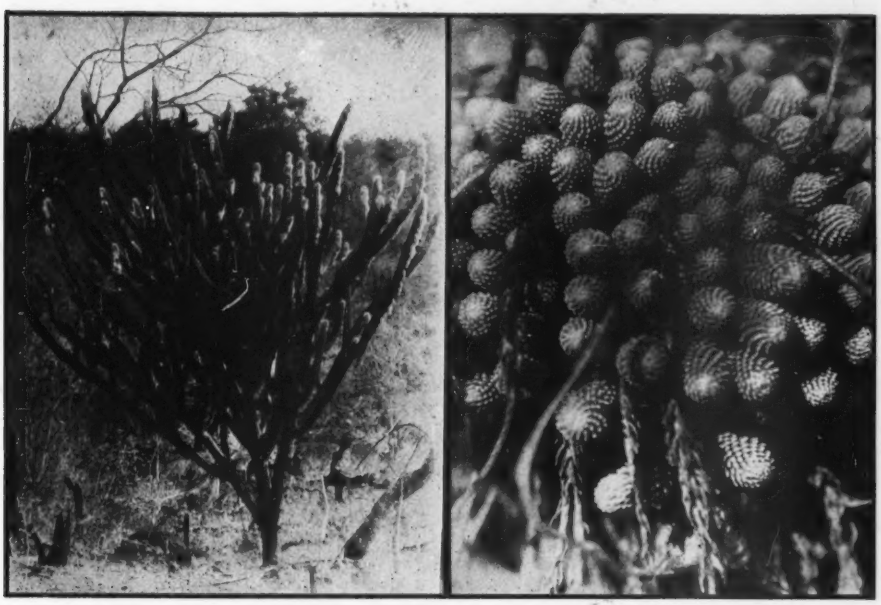

FIG. 25. *Cephalocereus leucocephalus* (Poselger) Br. and R., the Old Goat Cactus grows only in dense vegetation. It took two men with machetes half an hour to clear the vegetation so this plant could be photographed. The plant is about twenty feet tall and is an exceptionally large and full specimen. RIGHT: *Sedum alamosanum* S. Watts, which covered the cliffs over the Watchera River with its dainty blue-green clumps covered with pink flowers.

S. Watts.* It clung in clumps, nearly covered with pink flower stalks.

Beyond Metate, where we visited a Tarahumare school, we climbed a steep hillside all afternoon. Toward evening we noticed a pendent Echinocereus hanging from rocky cliffs. It seemed strange to find them growing in a pine forest, but every large boulder seemed to have a plant or two, as well as a few specimens of globular *Ferocactus alamosanus* var. *platygonus*. The plants were interesting serpent like things when hanging, one we collected had a pendent stem over two feet long and in no place was this stem an inch in diameter. In other specimens the stems were all short, forming a compact little clump. The remarkable thing about the plant was its flower, which had a definite tube over three inches long before it opened into the corolla. Many of these flowers had an overall length of six inches and a diameter of three and a half inches, which definitely placed the species in the *sheeri, salm-dyckianus* group. At the present we consider the plant to be *Echinocereus sheeri,* due to the deep pink to magenta color of the flower and white or creamish spines. We were to notice this species from time to time through the mountains.

Our camp that night was in the Tarahumare village of Huastagota. Their small homes were very well made of large rocks or pine logs, split pine logs forming roofs. This tribe, the largest north of Mexico City, is very industrious. The individuals are short and stocky, clean, and physically attractive. Unless they were industrious they would be unable to survive in this high country, as their living is hard. Small patches of wheat planted on little man made terraces, and patches of a small type of potato seemed to form their principal crop and diet. Nearly all cultivation was done by hand with crude shovels, although in several places we saw them "plowing" with oxen and a crude plow made of a log similar to that used in biblical times. They never ride animals, always walk; the best walkers and long distance runners in the world are Tarahumares. They are Catholics, as the Jesuits founded missions in their territory long before they came to Lower or Upper California, and their religious holidays are their principal diversion. In spite of extremely cold weather in winter, the Indians of the outer districts go about, often in the snow, dressed in only a loin

*Specimens collected belonging to the Crassulaceae were forwarded to Eric Walther of San Francisco, to whom we are indebted for their tentative identifications.

FIG. 26. LEFT: *Echinocereus scheeri* (Salm-Dyck) Rumpler, in flower near Cerocahui. Note the very long tube. RIGHT: Flower of *Lemaireocereus montanus* near Mollinas, Chihuahua.

cloth and blanket. Most of them speak little or no Spanish. Their chief craft seemed to be weaving the blankets which they carried and the fajas, a woven carrying band, which they wore about their waists or over their foreheads when carrying loads.

We spent most of the next day following a rushing stream in the bottom of a fern and pine filled canyon, in which we found a *Graptopetalum* species, near *G. occidentale,* as well as a plant resembling *Echeveria paniculata.* High on the precipitous canyon wall were cliff dwellings that were still occupied by Indians who ran away on our approach. Out on a mesa later that afternoon we came across a little agave, possibly *Agave parviflora.* That evening the animals had to be kept in a corral because of timber wolves which we heard during the night. For three days we continued to ride, up and up, only to descend from time to time into a canyon. We distinguished four different pines, and one or two cedars, but recognized none of them. We passed a large village, Cerocahui, in which the Indians were gathering for their holy week celebrations, and at which we stopped on our return. There we found a few succulents, a few Sedums and a large leaved Opuntia resembling *Opuntia robusta* Wend.

Finally, on April 4, our guide told us that we could cut off the trail and see the Barranca. Leaving the pack animals in care of Chico and one of the boys we rode off down a steep, pathless arroyo. In this forested region we noticed a flattened, single, large *Mammillaria,* very near *M. hamiltonhoytea,* which I have the pleasure of describing as *Mammillaria Craigii.* Continuing on, leading our horses down the steep brush covered hillside, we emerged on the brink of the Barranca of the Rio Urinque.

It so happened that we rather "burst" out on the rim, that is, coming out of the trees we were not aware of the chasm until we were within a few feet of it. The edge where we stood was absolutely precipitous, being a sheer cliff over one thousand feet high. The Barranca did not appear to be more than two-thirds as deep as the Grand Canyon of the Colorado in Arizona and the vegetation dimmed the colors of its rock wall, but in no way were we disappointed nor was the sight one to be soon forgotten. The plants, too, were very interesting and many unexpected ones were found. As is the case with the Grand Canyon, the rim is in the transition zone, supporting such vegetation as pines, cedars, etc., but upon descending into the canyon

Continued in May Journal

The next 4 pages are the 9th installment of Werdermann's "Brasilian und Seine Saulenkakteen.

THE CHRISTMAS CACTUS

By FRANK K. BALTHIS, (Ill.)
Author of "Plants in the Home"

Courtesy "Flower Grower"

Many complaints are heard concerning the uncertainty of the Christmas Cactus (botanically Zygocactus truncatus) blooming regularly each season. It is quite an order to find every flowering house plant blooming with the same degree of gayety each season. Even the easily grown Amaryllis frequently fails, the cause usually being traced to misunderstood practices. Many home gardeners fail to appreciate the fact that plants grow naturally under vastly different conditions and that not all require the same general treatment as to light, temperature, soil and humidity.

The Christmas Cactus is found in the wild state in the mountains of Rio de Janiero, Brazil. It is an epiphyte, which means that it grows on the branches of trees along with Bromeliads, Orchids and plants of similar habit. The original species has been improved upon so that there are now many hybrids available along the West Coast, and some of them are exquisite in their coloration.

The fact that the plant is an airplant is significant because in the wild it must, of necessity, obtain its food supply from the accumulation of leaf mold that lodges between roots that twine around the branch on which it finds an anchorage, and through the air-roots that are exposed to the atmosphere. These conditions are suggestive of the plant's soil requirements, and although there appears to be a variance of opinion regarding the best soil, the following may be recommended:

2 parts turfy loam.

2 parts leaf mold or peat (leaf mold can be purchased in sacks from supply houses).

¼ part torpedo sand (the coarser sand is better than building sand used in finishing plastering).

Thoroughly decayed cow manure added to the above at the rate of an 8 to 10-inch pot to a bushel of loam mixture.

In potting with this mixture, place plenty of drainage over the drainage hole in the bottom of the pot—broken pots, gravel, or pieces of cinder will suffice.

The species flowers about Christmas time, hence the common name, and after flowering it enters a period of rest. During this time the joints appear weak and some of them will shrivel and drop off. Water may

FIG. 27
It's an art to get the Christmas or Crab Cactus to flower abundantly, but old plants in full bloom are a glorious sight. The plant at right is grafted atop a night blooming Cereus stem.

Ladislaus Cutak photo

be reduced because the plant is not active and cannot transpire as much water as during more active periods. Within a month to two months, the joints gradually swell, become plump and take on new life. New growths appear and every evidence is present that the plant is in the best of health.

After danger from frost has passed, or along about May 30, according to the geographical location, the potted plants should be plunged to the rim in a semi-shady section of the garden. If no garden plot is at hand, a light, shady place on the porch will suffice, or the pot may be plunged in a window box. The morning sun will not be injurious, but the burning rays of the noonday and afternoon sun may prove so. Weak applications of cow manure may be applied at intervals of about three weeks during summer! if this manure cannot be obtained a complete commercial plant food is excellent. Simply scatter a small amount over the surface of the soil and water thoroughly. As with all Cacti, transpiration is very slow due to reduced stomata or breathing pores.

In autumn before the temperature has reached the freezing point, the plants should be removed to the house. The soil should be kept moist, but not saturated. When buds appear care must be taken not to overwater or the buds will fall and no flowers will be enjoyed. Sudden drafts cause trouble and especially when the plants are in bud. Living-room temperature will produce good plants, and if humidifiers are attached to radiators and kept filled with water some moisture will fill the atmosphere. Pans of water kept on the stove also help.

Comparatively small pots should be used to avoid overpotting with subsequent likelihood of overwatering or clogged soil. In this connection, it may be said that there is an increased use of glazed pots; these are ornamental and valuable but extra care must be exercised when watering. Jardinieres may take their place and if the surplus water is kept removed, they are among the most ornamental containers.

The Christmas Cactus is easily grafted on the Barbados Gooseberry (Pereskia pereskia). P. bleo, or serpentine or slender Cacti, of which there are a number of species. Try using a 2½ to 3-foot stem and graft in tiers along the stem. Grafting at the top of a Pereskia is an easy operation and it is usually performed in spring. Simply make a V-shaped cut at the top of the stem; cut the end of the scion (the part that is inserted into the graft opening) along the sides to a V-shape, and insert it. Fasten with raffia to avoid loosening. Keep in a warm room and in about a month the union will be well established.

Gardeners who enjoy a greenhouse may have a world of fun working with the Christmas Cactus. Cuttings will grow nicely when mounted on a board with sphagnum moss, or if chicken wire is placed against a wall, stuffed with moss, and cuttings fastened in the moss at close intervals. A temperature of from 60 to 70 degrees should be maintained, although the plants will pass through the winter, after flowering, in a much cooler temperature.

WHAT KINDA CACTUS IZZAT? by Reg Manning, famous cartoonist of the Southwest. This 100 page book is packed with humorous cactus drawings which are based on hundreds of interesting facts. For amusement and information, this book is unique. Ideal as a gift book for those who hate or enjoy cacti. Cloth bound $1.30 post paid.

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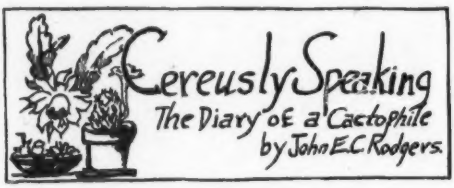

CULTURE IN OHIO

April 1. Sandy made up two corsages using for reference the article in the December BULLETIN, "Corsages From Succulents." The occasion was guest night and an old time dance put on by our College Club. The corsages caused as much comment as our creaky knees in the "Virginia Reel" and "Birdie in a Cage." Used the leaves of *Kalanchoe marmorata,* pinkish rosettes of *Graptopetalum paraguayense,* bloom stalks of *Haworthia cuspidata,* sprays of *Mesemb. blandum,* and a variety of glistening "Mesemb." with a small purple flower. The corsage made the society column.

April 2. Received a letter from W. P. Reedy, that genial gent from McComb, Mississippi. He expressed my concern, despite transportation priorities, (quote) "Say, do you realize that it is only four months until the Fourth-of-July and nothing said about our Convention. The Rail Roads are still running and they had conventions before autos. Why can't we have one again? We might not get all of them west of the Rockies, but there are plenty of members in our part of the country to hold one. Let's start a noise and see what we can do about it. If only the members within the radius of 500 miles get there that would be a good bunch" (end of Quote). In fact, nothing has been said about it at all. Speak up Cincinnati.

April 3. Horace, my pet box turtle isn't out yet (Johannesburg, Ye Editor's *tortoise,* came out the first day of spring, but that is in sunny California!) Wintered in the dry soil around my coal bin but constant shoveling of coal this winter evidently awakened him—anyway the first warm spell he moved to the S. W. corner of the Cactus House under the benches. He'd better sleep longer. He'll get none of our precious hamburg this year. Just received a feature from the Chicago Tribune of March 21, entitled "Prickly Cacti are Flowers to These Folk." It shows pictures of three familiar faces of the 1941 Convention-ers—Mrs. Cristian Radden, Robert Van Sickle, and Frank Kranz and the Radden and Van Sickle collections. The story mentions our friends Mrs. Cornelia Hunter of Chicago and Arthur Blocher of Amboy, Ill., cactophiles of the first water. When A card restrictions are no more, we will find our way to the Windy City and on to Amboy. There are a few collections in those parts I'm a dyin' to see.

April 6. Kleinia pendula bud opening—same shape as *Senecio stapeliiformis,* but authorities have found differences which, to my untrained eye, are superficial (this is one succulent that won't stand California winter—rots at the ground and has to be re-rooted. Ed.) Last of the eleven blooms closed on *Echinocereus knippelianus.* In my January 25 notes I described my treatment of Echinopsis this year and said I'd report later. Buds are half inch long on *E. pentlandii* (Lobivia), *multiplex, albiflora, hebrigii, duvallii, eyriesii,* and *oxygona.* Several others are showing fuzzy spots at the places where B. & R. tell me to look. Each of them has had two liberal liquid manure applications and water every other day. They never get direct sunlight on them, but the intense

light from above and all sides seem to agree with them.

April 9. Last year I complained on this date that we had an excess of precipitation of one and one-half inches. Alas, this year, the deficiency is almost as great. Looked over my hardy Opuntias. Several of the seedlings I raised from Utah collections have wintered. Good thing I used a liberal amount of sand or they'd be sky-hight from the frosts and thaws. *Harrisia eriophora* and *martinii* have buds on the "south side" of the stems next to the glass, where the light is so strong it bleaches the chlorophyl out of them. They do look slightly jaundiced but the buds make it O.K. with me. Have a variety of *Wilcoxia poselgerii* which has an almost nude bud of dark purple. The one I have had for several years also is budded. Is such an irregular bloom I often wonder if it is the same as B. & R. show with the regular whorl of petals. Both buds will open at the same time. I think perhaps I have had a variety up until now, not the true one. *Wilcoxia senilis* has new growth as well as blooms. *W. viperina* has never bloomed but grows freely enough under the same cultural conditions as other two.

April 14. Missed *Epithelantha micromeris* again. I swore it wouldn't blitz me again as it did last year, but "it dood it" again. Fruit above the matted center of white spines. Variety *greggi* I never miss. Why *micromeris?*.

April 16. Rebutia kupperiana bloomed. Doesn't take it long in the heat wave we get this time of year—80° today on the back porch at 4:30 p. m. Miracle of the miracles when I went in the greenhouse today, an unforgetable fragrance awaited me. *Echinocereus reichenbachii*—out of sight, but in full sun all winter, forgotten, no "kind attention," but had survived and was in bloom. Year after year I have bought *reichenbachii's*, only to discard them as you would cut flowers—for they invariably died. Victims I thought of dark Lake Erie winters. Evidently too much "kindness" killed them.

April 23. Read again with interest the article by Mrs. R. A. Stafford, Cedarville, Kan. "*Echinocereus* Do Flower Under Glass." I can add *Echinocereus perbellus, berlandieri* and *blanckii* to her list. They've budded for me right now. I still have *E. ehrenbergii, merkeri, pensilis, octacanthus, triglochidiatus, ledingii* and *de laetii* to flower for me, Mrs. Stratford. Fine plants to have, too. My 23 species have responded to outside bed culture as well as greenhouse care. So far, the observation is that all Echinocereii have green stigmas has been true of mine.

April 26. Kalanchoe welwitchii with its golden yellow upright flowers is through blooming (stil! flowering out of doors in California. Ed.) A real gem with plum-colored leaves to complement the golden flowers. Nature's an artist when it comes to succulent colors. I have a *Pachyphytum* in bloom with old rose blooms to match the tips of the leaves. When I make a picture, I sometimes find it necessary to use from three to five overlays on green to achieve the shades I see in my subject. *Opuntia monocantha* has a green fruit from last year which still refuses to ripen. An orchid to the wildest, most untamable cactus I have ever found—*Opuntia ramiosissima.* Money wasted to buy it. Last a while then dries up. Unrooted cuttings used in these parts in dish gardens.

April 30. After years of collecting Aloes, I now possess an *Aristata.* Grows rapidly, too. I have often been a "meany" with amateur collectors who were proud of their "Aloe aristata" and I told them it was *Gastrolea beguini"* which does resemble *aristata* somewhat. In 1932, when I first visited Gene Ziegler, he pointed with justifiable pride to his six-headed aristata (see Succulents for the Amateur, Figure 239). Mine is five heads short of my 1932 ambition to own a big one.

May Culture Cues

1. Remember not to move plants while in bud until the buds are well developed. Change of light causes aborting.
2. Increase amount of water as plants show rapid growth.
3. Check for fungus, apids and sow bugs with added warmth and humidity.
4. Take inventory of Sempervivums and hardy cacti. Reset any that are crowded or winter-loosened.
5. Feed the Echinopsis plenty of manure water as buds begin to develop.
6. Check plants for acclimatization on side porch where light is good, but direct sunlight cannot burn them.
7. Shade seedlings and check Selenicereus buds to see that they do not get over heated.
8. Give thin coat of whitewash to the roof of the greenhouse (put a handful of salt in the mixture). Protect plants next to windows from burn.
9. If plants need larger pots do not disturb roots but set ball of soil in next size pot and fill with new dirt. Do not disturb a budded plant.
10. Make a record for comparison of plant treatment and results.
11. Special attention should be given the following plants which have bloomed for me in May in previous years: *Rebutia kupperiana, oururensis* (John, where did you get this name? Ed.); *Mammillaria camptotricha, wildii, hemisphaerica, microhelia,* and *karwiskiana; Theleocactus bicolor; Hamatocactus setispinus; Lophophora williamsii; Selenicereus mac donaldiae, coniflorus,* and *donkelaari; Astrophytum myriostigma; Thelocactus lloydii; Opuntia elata* and *maxima; Echinocereus reichenbachii; Chamaecereus sylvestrii; Malacocarpus ottonis; Gymnocalycium platense; Neobesseya missouriensis; Epiphyllum ackermanii, grandiflora, pittieri, anguliger, darrahii,* and *roseum superbum.*

ADDENDUM TO CACTUS SEED GERMINATION

In the 12th issue of Vol. 1 of the Amateur Bulletin was an article my myself on cactus seed germination in our attic for the year 1941. I am sure many will be interested in a report from the year 1942 and my experiments with other kinds of cactus. Some were purchased and some collected in my garden.

All the following were planted July 22nd. Temperature outside was 80 degrees at 5 P. M. and in the attic it was 98 degrees at the same time.

Cephalocereus senilis: July 27th (5 days)—7 seedlings. July 29th (7 days)—7 more.

Celistocactus strausii: Aug. 3rd (12 days)—3 seedlings. Aug. 7th (17 days)—3 seedlings.

Melocactus intortus: July 30 (8 days)—3 seedlings. Aug. 2nd (11 days)—6 seedlings. Aug. 7th (16 days)—3 seedlings.

Echinocereus rigidissimus: July 27th (5 days)—67 seedlings.

Coryphantha neo-mexicana: July 28th (6 days)—148 seedlings.

Mammillaria applanta: July 28 (6 days) 174 seedlings. I had a real headache trying to count them, so I am sure I can be excused if I miss one or two either way.

Hamatocactus setispinus: July 29th (7 days)—63 seedlings.

Coryphantha echinus: July 28th (6 days)—72 seedlings.

Euphorbia Horrida: August 3rd, planted 8 seeds, temperature outside at 2 P. M. was 76 degrees and in the attic was 86 degrees: August 8th (5 days)—6 seedlings. August 9th (6 days)—1 more. One did not germinate.

I have secured many more packets of seeds, and I am ready for a big year of experimenting in 1943.

PROF. ARTHUR BLOCHER, Amboy, Illinois.

SPINE CHATS

LADISLAUS CUTAK

With warm weather just around the corner, we hope, I must pass along an excellent idea sponsored by Mrs. D. J. Van Devander of Hannibal, Missouri. It is a "teacart garden," which can be rolled outdoors in the summer and wheeled in when frosts threaten in the fall. The "teacart garden" is an answer to apartment dwellers and to homes with small backyards that do not have a garden plot. Any old tea wagon or similar homemade affair, with an upper and a lower tray, will serve the purpose. The trays could be made of metal or of everlasting cypress wood, deep enough to plant even good-sized cacti, unless potted specimens are wanted instead. The upper tray could hold the large and tall plants, while the lower would be suitable for smaller specimens. The trays, of course, should be supplied with drainage, as this is most important. A planted teacart could be a permanent unit kept in the cellar during the winter months and then rolled out on the lawn in the summertime, thus saving the work of repotting or transplanting each year. In addition, such a cart could easily be wheeled under the porch or the spreading canopy of a tree during a heavy shower or moved about the yard to receive the full benefits of either the morning or late afternoon sun, as the case warrants.

Mrs. Van Devander is the cactus-minded wife of a Methodist minister in Mark Twain's beyhood home town. She has approximately 130 different kinds of cacti and succulents, most of which she can call by their right name. Last year she exhibited her plants at the Hannibal Flower Show, using a miniature pueblo for a background, and this display aroused a great deal of interest.

* * *

For over three centuries it was believed that the paper used by the Maya and Aztec Indians was made from the fibers of the leaves of the maguey plant or *Agave*, but it now appears that that theory will have to be discarded, inasmuch as Hernandez, the botanically-minded conquistador, as early as 1570, stated that the paper came from a tree of fig-like affinity, which today has been identified as *Ficus petiolaris*. Victor W. von Hagen in his interesting article on "Mexican Paper-Making Plants" in the Journal of the New York Botanical Garden (44 : 1-10, January 1943) further discounts the maguey theory, and it will be of interest to await his manuscript, "The Aztec and Maya Paper-makers" which is now in final preparation for publication.

* * *

Although Charles L. Gilly may not be so well known to cactus fans, I would like to introduce this gentleman to you. From 1939 to 1942 he served as a botanical artist for the taxonomic staff of the New York Botanical Garden. JOURNAL readers will recall him as the illustrator of E. J. Alexander's new species in the *Crassulaceae* as described in the 12th, 13th and 14th volumes of our worthy magazine. Only a few months ago he accepted a position with the U. S. Board of Economic Warfare as a taxonomist on a drug crop investigation to Mexico and Central America.

I met young Gilly six years ago when he was just bursting with plant hunting enthusiasm. At that time he was headed for Cuba and planned to do his botanizing on a motorcycle. The "expedition" came to more or less of an end, largely to financial reasons. However, he managed to find work in a Key West hotel where he served in a combination capacity of bellhop-chambermaid and night clerk for several months. Before the year was up he got married and left for New York to accept the position of a volunteer worker in the Experimental Laboratory of the American Museum of Natural History and to pursue his studies at Columbia University. Eventually he landed the position at the New York Botanical Garden.

Judging from his recent letters, Gilly has really become fascinated by the cactus wealth of Mexico and he is thoroughly enjoying his work, even though collecting "numerous saddle sores" along with the herbaceous and other plant material. "Some of the cacti which I have seen in the past few days," he writes, "make the so-called 'specimen plants' of the conservatories look like mere imitation of the real thing." And for enjoyment, he adds further "shooting orchids and bromeliads out of the trees with a .45 and watching gray and green parrots flying back and forth across the river in pairs is certainly different than sitting at a desk.

* * *

Last month I had the pleasure of meeting Alfred M. Bailey, Director of the Colorado Museum of Natural History, and to view his two beautiful color films: "Desert Islands of Mexico" and "Our Southwestern U. S. A." The latter was a highly colorful desert travelogue filmed in Arizona and so interesting that it is highly recommended to cactus lovers everywhere. If Dr. Bailey ever comes to your town with these motion pictures don't fail to see them. The eminent naturalist happened to be in Arizona when the desert was a riot of color and so he had splendid opportunities for photographing the wealth of colorful plant material, including wicked chollas, prickly pears, saguaros, hedgehog cacti, yuccas, agaves, ocotillos and many others. The Arizona film brought back memories of an eventful camping trip which I undertook a few years ago into the romantic wilds of the Saguaro State.

* * *

I have three sets of newsclippings left from the First Convention of the Cactus and Succulent Society of America held in St. Louis on July 4-6, 1941. I will send these to the first three readers who write for them, addressing me in care of the Missouri Botanical Garden, St. Louis. Included in each set is a full two-page spread of flowering cacti from the rotogravure magazine of the St. Louis Globe-Democrat. Since the author of this monthly column saves all kinds of clippings from magazines and newspapers (dealing with our pet plants, personalities, etc.), won't you kindly inform me when anything of this nature appears in your local papers, etc.?

* * *

Reg Manning is not the only cartoonist of the cactus clan. Harry Locke, who is now helping pilot airplanes across the ocean, is another creator of fantastic desert cartoons. This pen and ink artist endows his subjects —the saguaro, cholla, bisnaga, prickly pear, etc.— with comic personalities and some of his whimsical pictures are on display in the March issue of the DESERT MAGAZINE, published at El Centro, California.

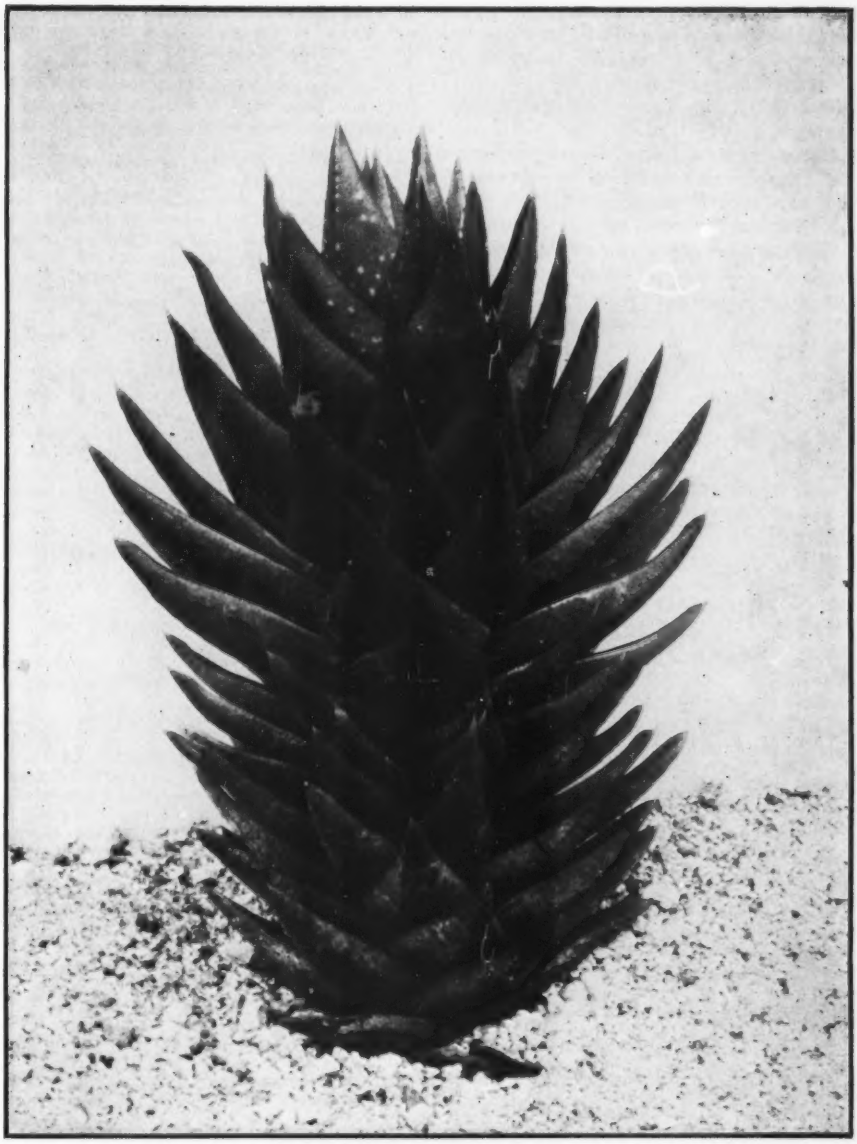

FIG. 28. *Apicra pentagona* (Haw.) Willd. var. *Willdenowii* Bak. nat. size.

Notes on Apicras

By J. R. BROWN

Apicra pentagona (Haw.) Willd. var. **Wildenowii** Bak. in Journ. Linn. Soc. XVIII (1880) 217; Berger in Pflanzenr. IV. 38 1908) 117—*Apicra spiralis* Willd. in Berl. Mag. V (1811) 273—*Haworthia spiralis* Haw. Syn. (1812) 97.—*Aloe spiralis* Salm Dyck. Monogr. (1836-63) sect. 1 fig. 5. A much more robust plant than *Apicra*

pentagona with leafy stems 8-10 cm. in diam., and with the leaves arranged in 5, more or less spiral rows, 5 cm. long and 2-2.5 cm. wide.

Locality: Unknown.

Introduced to cultivation in Europe probably about 1800.

The plant of this Apicra which is shown in the illustration is an example of the often varying nature of the leaf arrangement. In the older part of the plant the leaves are arranged in very slightly spiral rows, while later on, due to some circumstance conducive to exceptional growth, the leaves are almost multifariously arranged and again, the younger growth at the top has slowed down during the past 2 years and the leaves are once more becoming arranged in 5 distinct rows.

While it may be, that plants of this and other Apicras and Haworthias grown under glass where conditions of growth are controlled to a great degree, the growth from year to year may be very slow and regular, but, where these plants are grown outdoors subject to natural conditions of light, temperature and rain, growth may be more or less irregular, depending on the variation of these conditions from year to year, e.g. a longer than usual rainy period at a particular season may induce a very strong growth of the plants and thus cause the unusual number of leaves developed because of this, to be arranged otherwise than would normally be the case.

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QUESTIONS AND ANSWERS

I wonder if you can help me out with a problem I am having with my Epiphyllum plants? I am wintering them in a cool room about 50 degrees near a south window. I do not let them dry out entirely but water them enough to keep them moist. The stems are becoming wrinkled and on the end of them are what appear to be aerial roots. The stems are not hard or solid the way they are in the summer. A few of them have dried up.

Can you please tell me what I should do about this. Nowhere in my books or literature can I find a remedy. I do wish someone would put out a book or magazine that has complete cultural information on Epiphyllums. I will be very thankful if you can tell me what is wrong, or where I can obtain information about it.

WILLIAM J. HOHMAN, New York.

The wrinkled stems and production of aerial roots at the end would seem to indicate that the root system of the plant has become damaged or rotted through one of several causes, among which might be too heavy a soil that will not drain quickly, too much fertilizer, or a disease or insect infestation such as root-knot nematode. Damage to the root system of the plant from any of these causes would starve the plant and cause the stems to become wrinkled.

Some varieties will shrivel when they become dormant, during which time they should be allowed to rest, keeping the soil only slightly moist, and when they are ready to grow again the stems will become plump and firm and plenty of flowers will develop. Some varieties do this immediately after the blooming period and pick up in the fall while others will go dormant during the cooler winter months and pick up early in the spring.

I would suggest that you carefully remove the plants from the containers and examine the roots. If they are dead or decayed, they should be cut back to green, live tissue and re-rooted in a mixture of sand and peat or sand and leaf mold, then when a clump of roots about the size of your fist is formed, they may be replanted into a potting mixture without shaking off any more soil or disturbing the roots any more than is necessary.

An ideal soil mixture consists of 6 parts leaf mold, 3 parts well-rotted manure, 4 parts decomposed granite or coarse sand. Brown peat moss may be substituted for part or all of the leaf mold if necessary.

R. W. KELLY.

Trichocereus macrogonus (Salm-Dyck) B. & R.

WM. TAYLOR MARSHALL

Although frequently found in American collections, the references to *Trichocereus macrogonus* (Salm-Dyck) Br. & R. in the literature is decidedly confusing and flowers are unknown to most authorities.

As cultivated in California, the species is a robust plant six to nine feet (2 to 3 meters) tall and up to 4½ inches (11 to 12 cm.) in diameter, sparcely branching from the base, with nine ribs, sometimes only seven or eight. The new growth is a yellowish green at first but becoming blue-green almost at once. The light brown radial spines are usually 8 and spreading. A single porrect central of a darker chestnut brown is usual although there are sometimes 3.

Flowers are borne near the top of the plant and are very fragrant, opening slowly throughout the day and expanding fully only after nightfall. They last several days in favorable weather.

When fully expanded the flower is 5½ inches (14 cm.) long and 6¼ inches (16 cm.) broad, funnelform below, widening into a shallow cup above. The shining green ovary and tube bear

appressed scales about 1 cm. wide and on the ovary the same length but on the tube they attain a length of 3 cm. and bear a few dark brown hairs in their axils.

The outer perianth segments are linear, acute, entire and greenish white with white margins and dark green midribs, sometimes with bronzy coloration at the tip. The inner perianth segments are broadly oblanceolate, apiculate and erose, about 8 cm. long and 4 cm. broad at the widest part, white with green midribs.

The numerous filaments are in two series, from the base and top of the tube, included and much shorter that the pistil, thread-like and greenish white. The ovate, flattened anthers are cream colored. The robust, greenish-white style curves upward and the 14 linear stigma lobes are 2 cm. long and greenish-white.

FIG. 29. *Trichocereus macrogonus* flowering in C. J. McCourt's garden in Altadena, California, June 25th. Haselton photo approx. half size.

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